Abstract

This thesis deals with changes in nutritional status and body composition in adolescent girls with anorexia nervosa (AN) during realimentation. The main aim of the thesis (i) is to compare the nutritional status and body composition of 16 patients at the beginning of realimentation and with a 6-month interval. Secondary objective (ii) is to compare the course and treatment success of 20 patients with AN diagnosed before the covid-19 pandemic and 21 patients diagnosed during the pandemic. Patients were also compared (iii) with a control group of 14 healthy age-matched girls. Data were analyzed using Statistica 12 software.

Results: (i) In the 16 patients who attended the follow-up examination, there was a significant increase in body weight and BMI (both $p < 0,001$) from the initial 40,7±6,54 kg (BMI 15,69±1,97) to 48,7±9,0 kg (BMI 18,26±2,60) during realimentation. Significant increase was observed in both fat ($p<0,01$) and non-fat ($p<0,05$) mass. Also, a significant increase ($p < 0,01$) was found in resting energy expenditure measured by indirect calorimetry after 6 months of realimentation. Comparing REE measured by indirect calorimetry and calculated according to the Schofield equation, it was found that while these values were statistically significantly ($p < 0,001$) different before realimentation, they were no longer significantly different after 6 months of realimentation. In laboratory parameters, only a significant ($p < 0,05$) increase in total protein level was observed.

(ii) When comparing the AN group of patients diagnosed before and during the covid-19 pandemic, a significant difference was found only in the percentage of adipose tissue at baseline, with patients diagnosed during the pandemic having a significantly lower ($p < 0,01$) percentage of fat measured by bioimpedance, and a lower ($p < 0,05$) percentage of fat calculated from skinfold measurements. There was no significant difference between patient groups in laboratory parameters, diagnostic delay, proportion of relapses, length of hospitalization, or weight gain during hospitalization. Comparison of treatment success between the two groups of patients after 6 months was not possible due to the low number of patients who presented for follow-up.

(iii) AN patients had significantly (all $p < 0,001$) lower weight, BMI, fat percentage and both adipose and non-fat tissue weight compared to healthy controls. They also had significantly (all $p < 0,01$) lower REE as measured by indirect calorimetry, prealbumin levels and thrombocyte counts. Total protein and fasting glycaemia levels were also significantly lower (all $p < 0,05$) in AN patients.

Conclusion: The studied AN patients showed significant increases in total weight, adipose and non-fat tissue weight, BMI, resting energy expenditure and total protein levels during 6 months of treatment. No significant differences were found between patients diagnosed before and during the covid-19 pandemic in disease progression before diagnosis, nutritional status at the start of treatment, or during the first hospitalization. Compared with healthy controls, AN patients had significantly lower prealbumin, total protein, glycaemia and thrombocyte counts, lower weight and BMI, and lower resting energy expenditure.

Key words: anorexia nervosa, nutrition therapy, indirect calorimetry, body composition analysis, realimentation